

**IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT: Thao D. Hovanky

CONTINUATION OF  
SERIAL NO.: 09/215,059

FILING DATE: November 14, 2001

TITLE: System and Method for Rotatably Positioning a Camera or  
Similar Article About Two Orthogonal Axes

EXAMINER: Unknown

ART UNIT: Unknown

ATTY.DKT.NO.: PA2089US

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Commissioner for Patents  
Washington, D.C. 20231

Sir:

**PRELIMINARY AMENDMENT**

The captioned application is a continuation under 37 C.F.R. 1.53(b) of U.S. Serial No. 09/215,059, filed December 17, 1998. Before action, please amend the captioned application as follows.

**IN THE TITLE**

Please replace "Device for Rotatably Positioning a Camera or Similar Article About Two Orthogonal Axes" with the following rewritten title:

--System and Method for Rotatably Positioning a Camera or Similar Article About Two Orthogonal Axes--.

## IN THE CLAIMS

Please cancel claims 1-11 without prejudice. Please add the following scannable version of new claims 12-34.

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- 1 --12. (New) A method of positioning an article, the method comprising:
- 2 rotating the article about a first rotational axis using a first voice coil actuator by
- 3 adjusting a first current supplied to the first voice coil actuator; and

4 rotating the article about a second rotational axis using a second voice coil  
5 actuator by adjusting a second current supplied to the second voice coil actuator, the  
6 second voice coil actuator including a generally planar coil assembly having at least two  
7 coils.

1 13. (New) The method of claim 12, wherein the article is a camera.

1 14. (New) The method of claim 12, wherein the first rotational axis is a  
2 substantially horizontal axis substantially perpendicular to an optical axis of the article.

1 15. (New) The method of claim 12, wherein the second rotational axis is a  
2 substantially vertical axis substantially perpendicular to an optical axis of the article.

1 16. (New) The method of claim 12, further comprising rotating the article up  
2 to at least 360 degrees about the second rotational axis.

1 17. (New) The method of claim 12, further comprising using a control system  
2 to control rotating of the article about the first and second rotational axes.

1 18. (New) The method of claim 17, wherein the control system comprises a set  
2 of sensors for generating signals representative of an angular position of the article.

1 19. (New) The method of claim 17, wherein the control system comprises at  
2 least one processor capable of receiving signals representative of an angular position of  
3 the article and responsively adjusting the current supplied to the first and second voice  
4 coil actuators such that the article is caused to rotate in a direction of desired angular  
5 position.

1        20.        (New) A rotational positioning device for positional an article, the  
2 rotational positioning device comprising:  
3        a first voice coil actuator coupled to the article for rotating the article about a first  
4 rotational axis by adjusting a first current supplied to the first voice coil actuator; and  
5        a second voice coil actuator coupled to the article for rotating the article about a  
6 second rotational axis by adjusting a second current supplied to the second voice coil  
7 actuator, the second voice coil actuator enabling the article to rotate up to at least 360  
8 degrees about the second rotational axis.

1        21.        (New) The rotational positioning device of claim 20, wherein the second  
2 voice coil actuator comprises a generally planar coil assembly including at least two  
3 coils to which current may be independently supplied.

1        22.        (New) The rotational positioning device of claim 20, further comprising a  
2 yoke for rotatably supporting the article, the article being rotatable relative to the yoke  
3 about the first rotational axis.

1        23.        (New) The rotational positioning device of claim 22, wherein the second  
2 voice coil actuator is fixedly coupled to the yoke for co-rotation therewith.

1        24.        (New) The rotational positioning device of claim 20, further comprising a  
2 rotation device coupled to the article and to the first and second voice coil actuators, the  
3 rotation device rotatably supporting the article.

1        25.        (New) The rotational positioning device of claim 20, wherein the article is  
2 a camera.

1        26.        (New) The rotational positioning device of claim 20, wherein the article is  
2 a video camera.

1 27. (New) A rotational positioning device for positioning an article, the  
2 rotational positioning device comprising:  
3 means for rotating the article about a first rotational axis using a first voice coil  
4 actuator by adjusting a first current supplied to the first voice coil actuator; and  
5 means for rotating the article about a second rotational axis using a second voice  
6 coil actuator by adjusting a second current supplied to the second voice coil actuator,  
7 the second voice coil actuator including a generally planar coil assembly having at least  
8 two coils.

1 28. (New) The rotational positioning device of claim 27, wherein the article is  
2 a means for recording an image.

1 29. (New) The rotational positioning device of claim 27, wherein the first  
2 rotational axis is a substantially horizontal axis substantially perpendicular to an optical  
3 axis of the article.

1 30. (New) The rotational positioning device of claim 27, wherein the second  
2 rotational axis is a substantially vertical axis substantially perpendicular to an optical  
3 axis of the article.

1 31. (New) The rotational positioning device of claim 27, further comprising  
2 rotating the article up to at least 360 degrees about the second rotational axis.

1 32. (New) The rotational positioning device of claim 27, further comprising  
2 using a control means to control rotating of the article about the first and second  
3 rotational axes.

1        33.        (New) The rotational positioning device of claim 32, wherein the control  
2 means comprises a sensing means for generating signals representative of an angular  
3 position of the article.

1        34.        (New) The rotational positioning device of claim 32, wherein the control  
2 means comprises at least one processing means capable of receiving signals  
3 representative of an angular position of the article and responsively adjusting the  
4 current supplied to the first and second voice coil actuators such that the article is  
5 caused to rotate in a direction of desired angular position.--

### REMARKS

The present application is a continuation of U.S. Serial No. 09/215,059 (hereinafter the "'059 Application") under 37 C.F.R. 1.53(b). This Preliminary Amendment is being filed concurrently with the application and prior to receipt of the first Office Action. The '059 Application contained claims 1-11, which are canceled by this amendment without prejudice. In addition, this Preliminary Amendment adds new claims 12-34. Therefore, claims 12-34 are presented for consideration. No new matter has been added by these amendments. All the pending claims comply with all the requirements of 35 U.S.C. Accordingly, Applicant requests examination and allowance of all pending claims.

Additionally, the title has been amended.

Attached hereto is an appendix entitled "VERSION WITH MARKINGS TO SHOW CHANGES MADE," which is a marked-up version of the changes made to the present application by the current amendment.

The Examiner is respectfully requested to enter this Amendment and to examine the pending claims. The Examiner is respectfully urged to consider the claimed invention at the earliest time possible and issue a favorable action indicating the application is in condition for allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone Applicant's undersigned representative at the number given below.

Respectfully submitted,

Thao D. Hovanky

Date: 11/14/01

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE TITLE**

The title has been amended as follows:

**[Device]** System and Method for Rotatably Positioning a Camera or Similar Article  
About Two Orthogonal Axes

**IN THE CLAIMS**

Claims 1-11 have been canceled without prejudice. New claims 12-34 have been added  
as follows:

1. CANCELED
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1 --12. (New) A method of positioning an article, the method comprising:  
2 rotating the article about a first rotational axis using a first voice coil actuator by  
3 adjusting a first current supplied to the first voice coil actuator; and  
4 rotating the article about a second rotational axis using a second voice coil  
5 actuator by adjusting a second current supplied to the second voice coil actuator, the  
6 second voice coil actuator including a generally planar coil assembly having at least two  
7 coils.

13. (New) The method of claim 12, wherein the article is a camera.

14. (New) The method of claim 12, wherein the first rotational axis is a  
substantially horizontal axis substantially perpendicular to an optical axis of the article.

15. (New) The method of claim 12, wherein the second rotational axis is a  
substantially vertical axis substantially perpendicular to an optical axis of the article.

16. (New) The method of claim 12, further comprising rotating the article up  
to at least 360 degrees about the second rotational axis.

17. (New) The method of claim 12, further comprising using a control system  
to control rotating of the article about the first and second rotational axes.

18. (New) The method of claim 17, wherein the control system comprises a set  
of sensors for generating signals representative of an angular position of the article.

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1 19. (New) The method of claim 17, wherein the control system comprises at  
2 least one processor capable of receiving signals representative of an angular position of  
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4 coil actuators such that the article is caused to rotate in a direction of desired angular  
5 position.

1 20. (New) A rotational positioning device for positional an article, the  
2 rotational positioning device comprising:  
3 a first voice coil actuator coupled to the article for rotating the article about a first  
4 rotational axis by adjusting a first current supplied to the first voice coil actuator; and  
5 a second voice coil actuator coupled to the article for rotating the article about a  
6 second rotational axis by adjusting a second current supplied to the second voice coil  
7 actuator, the second voice coil actuator enabling the article to rotate up to at least 360  
8 degrees about the second rotational axis.

1 21. (New) The rotational positioning device of claim 20, wherein the second  
2 voice coil actuator comprises a generally planar coil assembly including at least two  
3 coils to which current may be independently supplied.

1 22. (New) The rotational positioning device of claim 20, further comprising a  
2 yoke for rotatably supporting the article, the article being rotatable relative to the yoke  
3 about the first rotational axis.

1 23. (New) The rotational positioning device of claim 22, wherein the second  
2 voice coil actuator is fixedly coupled to the yoke for co-rotation therewith.

1 24. (New) The rotational positioning device of claim 20, further comprising a  
2 rotation device coupled to the article and to the first and second voice coil actuators, the  
3 rotation device rotatably supporting the article.

1 25. (New) The rotational positioning device of claim 20, wherein the article is  
2 a camera.

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2 a video camera.

1 27. (New) A rotational positioning device for positioning an article, the  
2 rotational positioning device comprising:  
3 means for rotating the article about a first rotational axis using a first voice coil  
4 actuator by adjusting a first current supplied to the first voice coil actuator; and  
5 means for rotating the article about a second rotational axis using a second voice  
6 coil actuator by adjusting a second current supplied to the second voice coil actuator,  
7 the second voice coil actuator including a generally planar coil assembly having at least  
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3 axis of the article.

1 30. (New) The rotational positioning device of claim 27, wherein the second  
2 rotational axis is a substantially vertical axis substantially perpendicular to an optical  
3 axis of the article.

1 31. (New) The rotational positioning device of claim 27, further comprising  
2 rotating the article up to at least 360 degrees about the second rotational axis.

1        32.        (New) The rotational positioning device of claim 27, further comprising  
2        using a control means to control rotating of the article about the first and second  
3        rotational axes.

1        33.        (New) The rotational positioning device of claim 32, wherein the control  
2        means comprises a sensing means for generating signals representative of an angular  
3        position of the article.

1        34.        (New) The rotational positioning device of claim 32, wherein the control  
2        means comprises at least one processing means capable of receiving signals  
3        representative of an angular position of the article and responsively adjusting the  
4        current supplied to the first and second voice coil actuators such that the article is  
5        caused to rotate in a direction of desired angular position.--